

PATENT
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SPECIFICATION

Title: AUTOMATED LICENSING AND ACCESS TO GRANTED
LICENSES FOR WORKS OF AUTHORSHIP

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**AUTOMATED LICENSING AND ACCESS TO GRANTED LICENSES FOR
WORKS OF AUTHORSHIP**

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BACKGROUND OF THE INVENTION

10 This invention addresses the problem of how to obtain licensing permission to use material created by another and how to present assurances that permission was obtained for the use.

15 All forms of human expression that can be recorded in a tangible medium are protected by copyright as "works of authorship". The possible media of expression include text, two-dimensional static visual images, moving visual images, three-dimensional sculptures, music recorded with visual graphics, music recorded in digital pitch specifications, music recorded as soundwaves, and soundwave recordings of spoken words. This list is not exhaustive as new forms are continually being invented.

20 When a party who does not own the copyrights in a work of authorship wishes to make a use of that work of authorship, a license is generally required. The owners of the copyrights generally are willing to allow their works to be used in exchange for a fee. Copyright clearinghouses have been established for various kinds of works of authorship so that standing offers of licenses from the owners of copyrights can be assembled in one place from which they can easily be retrieved and accepted. Typically, the clearinghouses also process and enforce the payment of fees by those who accept the offered licenses. Using labor intensive methods, the clearinghouses generally track all of this information on paper and computer databases and handle communications with owners of copyrights and with licensees in person, by telephone, by fax, and by e-mail.

30 The Internet has presented serious challenges to the established copyright clearance systems. Many forms of works of authorship are now published digitally

on the Internet, including text, audiowave recordings, digital music specifications, still images, and videos. When these works of authorship are received by a client computer on the Internet, a copy can very easily be made on the client computer. The copy can then be reproduced, distributed, performed, displayed, or used to prepare a derivative work. Although it is very easy to make such uses of source works of authorship, it is very difficult to find the owners of copyrights in these works or their agents and obtain licenses. Furthermore, even if the source work of authorship is used with permission, it is difficult for a person viewing the reproduced work, including the owner of copyrights in the source, to verify that the source was, in fact, used with permission without exceeding the scope of the license.

Inventors have attempted to solve this problem by presenting technical means to prevent or discourage unauthorized use of works of authorship. These methods include using public key encryption to verify certificates of authority which are attached to works of authorship to prove that licenses have been obtained. They also include various methods of applying watermarks to a digital work of authorship to trace the reuse of a work.

SUMMARY OF THE INVENTION

Rather than presenting technical barriers to unauthorized use or providing means to discover or prove unauthorized use, this invention makes it much easier to obtain licenses (or "clearances") to use source material and to verify that the material has been used within the scope of the license. While some users will pirate materials given the opportunity, the vast majority will obtain a proper license if it can be done quickly and easily and they can easily prove to others that they obtained the proper license.

In one aspect, the invention is a method for offering to recipients of published works of authorship a license to use the work of authorship. When a person uses a client computer (which may be in the form of WebTV, DVD player, electronic book viewer, PDA, etc.) connected to a computer network, generally the Internet, to receive a work of authorship from a server, the work of authorship is

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tagged with a unique identifier. This unique identifier can be used as part of a network address to ^{direct} the client computer's web browser to a licensing web page for that work of authorship. At the licensing web page, the terms of one or more alternative licenses are presented to the user. By providing information identifying the user and indicating acceptance of the offered license, the user can receive the desired license. To make this process easy for the user, the unique work identifier is transmitted along with the work of authorship in machine readable form so that it can be automatically read by the user's web browser and can automatically direct the web browser to the licensing web page. This is preferably accomplished by incorporating a "hot spot" into a viewable image that is transmitted to the user along with the work of authorship so that if the user selects the hot spot, the user's web browser automatically retrieves and displays the licensing web page.

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In another aspect, the invention is a method for granting licenses to use a work of authorship and publishing records of licenses granted. When the user retrieves the licensing web page and reviews the offered license, the licensing transaction can be consummated without human interaction on the part of the licensor or a human agent for the licensor. By transmitting from the user's client computer to the server of the web page digital information signifying acceptance of the offered license, the license transaction is completed. The server of the licensing web page then automatically creates a license record associated with the license that has been granted. The license record is given a unique license identifier which can be used to find the license record on the network. The unique license identifier is then transmitted to the licensee for presentation with each licensed use of the source work of authorship. When the licensee publishes or otherwise uses the source material, the licensee presents the unique license identifier so that each recipient of the material can use the unique license identifier to access on the network the license record and determine the scope of the license that was granted.

In another aspect, the invention is a method for presenting recipients of works of authorship which are based on other source works of authorship with

information regarding a license to use the source work of authorship. In this embodiment, the original source work of source work of authorship need not be available on the network. The work which is based on the source is provided via the network and the unique license identifier is presented with it. Associated with
5 the license identifier is a hot spot in a displayed image. The user can select the hot spot causing the user's web browser to automatically access a license record stored on the network which contains relevant information about the licensing transaction which granted the license.

To build the network accessible databases for the invention, the
10 owners of copyright protected works of authorship ("content") register their works in a database accessible via the network called an "iCopyright" (Internet Copyright) database. Each registered work is given a unique work identifier or "tag" which is referred to as a "PRC" (Publisher's ^{Registered} Register Content). The PRC is expressed in machine readable form in digital copies of the work and is expressed
15 in human readable form on all other copies. When a person receives a work of authorship not in digital form, the human readable PRC tag can be used to manually find licensing offers for that work within the database.

When a work is registered and assigned a PRC, the offered license terms are entered into the database as a set of "business rules" for the content
20 identified by the PRC. By following these business rules, other parties may accept offers of licenses stated by the rules. Each time an offer of license is accepted, a license data record is established for that license in a database. Each data record is identified with a unique license identifier which is referred to as an iCopyright Clearance License ("ICL"). For each PRC there may be many ICLs.

25 When the licensee publishes or otherwise uses the source content, the licensee places an ICL tag on the licensee's material. Like the PRC tag, the ICL tag is embedded in both machine readable form and human readable form. Selecting a hotspot associated with the machine readable tag will direct a user's web browser to the license data record where the license information can be

verified. The human readable ICL tag can be used to manually find the license data record by typing it into a browser.

If the licensee under an ICL prepares a derivative work, this derivative work may also be registered in the database as a PRC. The derivative work will be published with both a PRC and an ICL. The PRC will point to an associated set of business rules which can result in further ICLs from the derivative work.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows how a user at a client computer that receives from a server a work of authorship can select a hot spot which takes the client to a licensing web page for the work.

FIG. 2 shows how a user at a client computer that receives from a server a work based on an original source can select a hot spot which takes the client computer to a license record for the license to prepare the work.

FIG. 3 shows the relationships within the network between a published source work with a hotspot, which points to a licensing web page from which a licensee creates a license record, which produces a license identifier, which is incorporated into works based on the source and points back to the license record.

FIG. 4 shows a database of PRCs with one set of business rules for each PRC and many ICLs for each PRC and that each ICL can result in many more PRCs.

FIG. 5 shows the process by which a publisher can register each content item in the database.

FIG. 6 shows the process by which a user can follow the PRC tag from published content through the process of obtaining a license and an ICL tag which is placed in the user's content.

FIG. 7 shows the display screen of a licensing website and the categories of available license.

FIG. 8 shows specific licenses available at the licensing website within a category.

FIG. 9 is an entity relationship diagram for the database.

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DETAILED DESCRIPTION

The invention is implemented with databases and web pages accessible via the Internet or any company's internal network. **FIG. 9** is an entity relationship diagram for the database. In this diagram, each work of authorship is referred to as an "article." Major subgroups within the database design include the publisher subsystem **61**, the end user registration subsystem **62**, the clearance and fulfillment subsystem **63** and the payment and revenue subsystem **64**. The publisher subsystem **61** and the end user registration subsystem **62** are further supported by a persons file **65** and an addresses file **66** which also further supports the clearance and fulfillment subsystem **63**. The revenue subsystem **64** provides data to a separate accounting system **67**.

When a user seeks clearance of a license to use a source work of authorship (an "article") the system also provides a service to the user by providing the article either in preferred electronic format or professionally printed and mailed. Consequently, there is a link **71** between the publisher subsystem **61** and the clearance and fulfillment subsystem **63**. The link allows articles from an articles file **72** or from the network accessed via a URL from an articles URL file **73** to be communicated to the clearance and fulfillment subsystem for transmission to a user as identified in a user file **74** or for transmission to a fulfillment provider as identified in a fulfillment providers file **75**.

Publishers, identified in the publisher's file **76**, can upload articles to the articles file **72**, or article URLs to the article URLs file **73**, along with article rules stored in an article rules file **77** and business rules for the licensing of each article stored in a business rules file **78**.

Clearances may be sought by companies, which are identified in a companies file **81**, as known via their contacts stored in the contacts file **82**, or by

users identified without companies stored in a users file **74**. Their requests for clearances are stored in the clearance request file **83** and the granted clearances are stored in a clearances file **84**. Similarly, fulfillments requested by users or companies are stored in a fulfillment request file **85** with details in a subfile **86**. The fulfillment options which may be allowed for each granted clearance are stored in the fulfillment options file **87**.

Each publisher will typically service many authors and the author identities are stored in an authors file **91**. The authors or publishers often work through agents which are stored in an agents file **92**.

When clearances are requested, the company or user will authorize a payment which is stored in the payments file **93**. Some of the revenue from the payments is allocated to publishers and stored in a shared revenue file **94**.

The database shown in **FIG. 9** is made available across the computer network through a user interface which controls the entire behavior of the system as perceived by parties accessing the system from client computers. As shown in **FIG. 1**, a member of the publisher's audience will retrieve a work of authorship which is provided by a server **2** to a client computer **4** via the network. Each work of authorship is presented with a visual image **1** at the client computer **4**. The visual image includes an icon **3** which is intended to create an association in the mind of the viewer with the invented system. Associated with the icon **3** is a unique work identifier **5**. The unique work identifier **5** can be entered at a keyboard of a computer on the Internet to access the licensing web page **8** for the work in question. The unique work identifier **5** is also encoded into the digital form of the visual representation **1** so that it can be used by a web browser to automatically refer ("point") to the licensing web page **8**. A hot spot **6** is defined to include the icon **3** and the work identifier **5**. If the user clicks on this hot spot **6**, the work identifier is used as part of a network address and the users' web browser is directed to the licensing web page via the machine-readable copy of the work identifier **5**. The PRC tag may be thought of as consisting of either the icon **3**, or the work identifier **5**, or both of them together, or the entire hot spot **6** which surrounds them.

While connected to the licensing web page **8**, the user may cause the client computer to transmit to the licensing web page an acceptance signal indicating that the offered license is accepted. The server which runs the licensing web page **8** then transmits to the client, in digital format ready for use in a document created by the user, an ICL which is evidence that the license has been granted.

As shown in **FIG. 2**, a license record **11** may be created in a database for any licensed work which is made available on the same network **13** as the database containing the license record **11**. The licensed work may be based on any source. It may be in any form. It is accompanied by a visual representation **12** which is displayed at a client computer when the work is accessed from the client computer. The visual representation **12** includes a license icon **14** and a license identifier **15**. The license identifier can be entered at the keyboard of a computer on the network **13** to access the license record **11**. The license icon **14** and the license identifier **15** are surrounded by a hotspot **16**. A machine-readable copy of the license identifier **15** is incorporated into the digital representation of the visual representation **12** such that when the user clicks on the hotspot **16**, the license identifier is used as part of a network address and the user's web browser is directed to the license record **11**. In this aspect of the invention, the source work **17** need not be available on the Internet or any other computer network. The ICL may be thought of as the icon **14**, or the license identifier **15**, or both, or the hot spot **16** which surrounds them.

FIG. 3 shows the complete system where both source works of authorship **21** and licensed works of authorship **22** and **23** are made available on the Internet or other network. The source content **21** includes a PRC **24** which points to a licensing web page **25**. There is a one-to-one relationship between each source item and each licensing web page. The contents displayed at the licensing web page are managed by the user interface and the database system shown in **FIG. 9**. The business rules from the business rules file **78** of the database system control the options that are presented to each client who accesses the web page. If the person at a client computer wishes to accept one of the offered licenses, the client computer transmits a signal to the database system which indicates acceptance.

This process triggers the creation of a license record **26** for that license transaction. The license record is stored in the clearances file **84** of the database. When the license record is created, the database system also transmits to the user an ICL **27** complete with an icon and a license identifier for the user to incorporate in any work of authorship prepared by the user which is based on the source **21**. As shown in **FIG. 3**, many works of authorship **22** and **23** which are based on the source can be created under a single license. They will all incorporate the same ICL **27**. The ICL **27** in each work which is based on the source **22** and **23** will point to the single license record **26**. The license record **26** also has a source icon **28** which is a link that points to the URL for the source **21**. This allows anyone who finds the license record to also find the source and, by following the PRC **24** at the source, find the licensing page **25** for the source.

Source items which are mirrored on the web all have the same PRC, all of which point to the same licensing page. The database behind the licensing page maintains a list of all the mirrored locations. It learns their locations either by explicit entry or via a web spider that automatically searches the web for mirrored copies and adds their locations to the database so when a user wants to move from the license record or another web page maintained by the database, they can choose from a set of mirrored copies that which is the "closest" or "easiest" for them to access.

The relationships between the essential items which are stored in the database are shown in **FIG. 4**. For each work of authorship there is a PRC **31**. For each PRC there is one set of business rules **32**. The rules can change over time, and all changes are recorded by the database. Once licenses have been accepted based on the business rules, there will be one or more license data records **33**, each identified by an ICL, for each PRC. If one of the licensees under an ICL creates a derivative work based on the source, the derivative work may itself be registered as a PRC **34**. The entries in the database for the derivative works **34** are the same as to the entries in the database for the source works of authorship **31**. They are as shown as separate groups in **FIG. 4** merely for clarity. As stated above,

each derivative work PRC 34 has one set of business rules 35. As shown in FIG. 4, the process has now become circular as derivatives of derivatives may be created.

Each publisher or author can, at any time, check the database to obtain information on the licenses which have been granted.

5 The unique work identifiers or PRCs may each be thought of as a universal resource name ("URN") as that term is used to refer to the basic structure of the Internet. A PRC is made up of a series of fields, each separated by a "." (dot). Moving left-to-right, each field provides successively increasing identification precision. A PRC has the following basic format:

10 **AA.BBBB.CCCCCC[.DDDD]**

where:

AA = the PRC series identifier, which determines how the rest of the fields are to be interpreted.

15 BBBB, CCCCCC and DDDD = subsequent fields, whose interpretation depend on the interpretation of each of the fields to the left.

For series 01 PRCs (issued by iCopyright), there are three fields. They have the following meanings:

01.BBBB.CCCCCC

20 where:

01 = PRC series 01

BBBB = Publisher's id

CCCCCC = Content Part Number (assigned by, or on behalf of, Publisher BBBB)

25

An ICL has one (or more) fields added to the right of a PRC, to specify the content user and content use that is registered for a particular PRC.

For example, **01.219619.57735.1234** is interpreted as follows:

30 01 = PRC series 01

219619 = Publisher ID, viz. iCopyright, Inc.

57735 = Content Part Number, viz. the article "What's in a name?", written by Mike O'Donnell.

1234 = Right to Use id, indicating that Andrew Cameron has the right to print 20 copies of this article on a local printer.

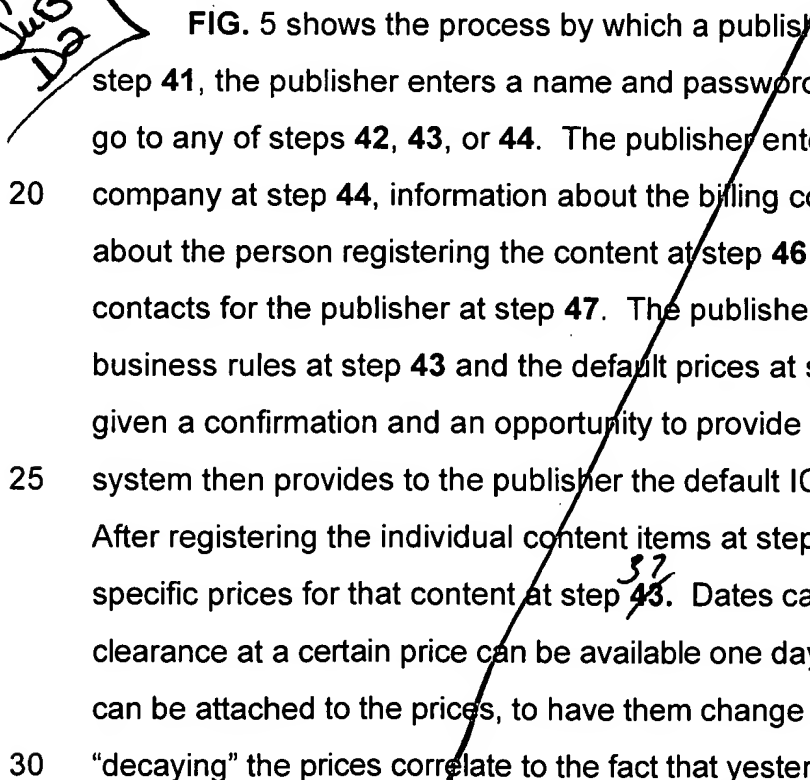
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PRCs are uniquely assigned whenever documents are registered via the web-browser based interface or when bulk registration or workflow registration protocols are used. ICLs are derived from PRCs, and are uniquely assigned

whenever a user commits to a particular clearance type for a particular piece of content. Additional clearances for the same content, even by the same user, usually result in a new and unique ICL being assigned. This obviously occurs when requesting a different type of clearance for a particular piece of content, but
5 may also apply when additional quantities are requested for the same type of clearance against the same piece of content.

For example, a user requests 200 high-quality reprints of an article, and then, two weeks later, wishes to order 200 more. Depending on whether the same print provider is used, and whether the publisher's business rules for that
10 piece of content have changed, two things can happen. If nothing has changed, the original ICL can be upgraded to 400 licensed copies. If anything changes in the order, a unique ICL for that use is issued.

A new PRC is only issued when the content it identifies changes so as to mean that a new and distinct piece of content has been created. If the same
15 piece of content is submitted for registration more than once, the same PRC is generated each time.

Sub 1a  FIG. 5 shows the process by which a publisher registers content items. At step 41, the publisher enters a name and password. From here, the publisher can go to any of steps 42, 43, or 44. The publisher enters information about the
20 company at step 44, information about the billing contact at step 45, information about the person registering the content at step 46 and information about other contacts for the publisher at step 47. The publisher then enters the default business rules at step 43 and the default prices at step 48. The publisher is then given a confirmation and an opportunity to provide additional instructions. The
25 system then provides to the publisher the default ICL code for that publisher. After registering the individual content items at step 42, the publisher enters specific prices for that content at step 43. Dates can be attached to prices so clearance at a certain price can be available one day and not the next. Functions can be attached to the prices, to have them change over time. "Aging" or
30 "decaying" the prices correlate to the fact that yesterday's news is not worth as

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much as today's news. The publisher receives base ICL codes for each content item from which the final ICL codes are generated at step ³⁸~~44~~. At step ³⁹~~45~~, the publisher can view the licensing web page that will be presented to the public.

FIG. 6 shows the process followed by a user. When a user views on the

5 Internet an item of content which is registered with the system **51** the user can click on a PRC tag **52** which directs the user's web browser to a page of the iCopyright website which is customized for that publisher and that content. At the website, the user enters a name and password at step **53**. From here, the user can go to step **54** or directly to step **58**. The user enters information about

10 himself, step **54**, his affiliation and intended use, step **55**, and his payment information, step **56**. The user then accepts or declines the terms and conditions at step **57**, and proceeds to state his intended use at step **58**. The user then views the license or a summary of the license, step **59**, and accepts or declines the license. If the license is accepted, the user proceeds to step **91** and receives

15 confirmation and specifies any special instructions that are required to fulfill the user's request. In the case of Professional Reprints or other specialized document fulfillment requests, the user is fills out forms that collect the required job and document transmittal information. This could also include the use of special (publisher required or user requested) document packaging, encryption,

20 digital watermarking or transmission techniques.

Upon successful completion (including payment authorization) an example citation and the ICL code for the license are provided. When the ICL icon **92** is embedded in a document, a user on the Internet who clicks on the icon is directed a license record **93** which presents the particulars of the license granted to the

25 user. Within this license record, any person who has the ICL code can view particulars for the work that was published with the ICL code in step **94**. The license record further includes an Internet URL which acts as a pointer back to the original source content **51** on which the work is based.

When a user clicks on a PRC associated with a work of authorship, a child

30 browser window **101**, which occupies less than the entire screen, appears

superimposed on top of the work of authorship as shown in **FIG. 7**. The child browser **101** includes a toolbar **104** for accessing related features of the system. In a primary information field **102** the window presents the title of the content, the owner of copyrights in the content and the publisher. Each of these three items
5 can be a link to an appropriate web page. From this child browser window, the user can view a list of available clearances **103**. The user can also review the terms to which the user must agree for the license to be granted by clicking on a go button **105**. Another go button **106** allows the user to login in so they can obtain a clearance.

10 *Sub D3* After the user selects a category of clearances from the list **103**, the user is presented with a screen such as shown in **FIG. 8**. From this screen, the user selects a specific license or clearance. For short quotations, many publishers allow passages shorter than a certain number of words to be used without a fee. These can be accommodated as shown in **FIG. 8** by allowing the user to paste the
15 desired passage into a window **111**. The system then counts the number of words pasted into the window and presents the count in a word count window **112**. The system then informs the user whether the authorized word count has been exceeded.

In addition to entering the database system from a PRC or an ICL, a user
20 can enter the database through a website which allows searches of the database. The database can be searched by copyright owner's name, author's name, content title, content URL, content PRC number, an ICL number, or any other attribute which will lead both to information on the source work of authorship and on any work of authorship based on the source which has also been registered.
25 The system will display to the user a summary of the licensing policies of any publisher for any content, as well as a link to a page on the publisher's website where the full information can be found.

The information in the database about each publisher is most complete for publishers who have voluntarily registered. However, the database is also loaded
30 with data on other publishers who have not chosen to register by collecting such

information which they publish. Users cannot automatically obtain licenses for works published by publishers who have not registered, but they can get assistance from the system in contacting the publisher directly to obtain a license.

- The system collects the necessary information from the user for a request for a
- 5 license and automatically forwards the request to the appropriate permissions manager for the publisher, thereby acting as an automated agent for the user.

- When the user enters the system to obtain a clearance, the user is given an opportunity to see a list of similar material also available for clearance through the system. This similar content list is created from the keywords and category
- 10 tags that were attached to the content when it, and its business rules, were registered.

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